Epitomes

Important Advances in Clinical Medicine

Neurosurgery

The Scientific Board of the California Medical Association presents the following inventory of items of progress in neurosurgery. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, research workers or scholars to stay abreast of these items of progress in neurosurgery that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Neurosurgery of the California Medical Association and the summaries were prepared under its direction.

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Early Versus Delayed Operation in Subarachnoid Hemorrhage

SUBARACHNOID HEMORRHAGE from a ruptured intracranial berry aneurysm remains a major source of morbidity and mortality in adults, afflicting patients in their most productive years. Many die before reaching a hospital, while others succumb to rebleeding and vasospasm after their original hemorrhage.

Rebleeding is most frequent in the first three weeks following aneurysmal rupture—its peak being at day 1—and kills and disables an additional 17% of patients reaching referral centers. Symptomatic cerebral vasospasm occurs in about a third of the patients between day 3 and day 21 and causes severe stroke or death in half of these. Traditionally, definitive surgical treatment (clipping of the aneurysm) has been delayed to avoid inducing or aggravating vasospasm in the acute state and to allow the cerebral swelling that follows the initial rupture to resolve. Because patients die while awaiting an operation, however, there has been recent interest in earlier operative intervention. Early surgical intervention effectively decreases the incidence of rebleeding and allows a more aggressive medical management of vasospasm using hypertension and hypervolemia without the risk of another rupture. It also allows the removal of spasmogenic clot from the basal cisterns, and it reduces medical complications related to prolonged bed rest and antifibrinolytic therapy.

A recently completed cooperative study addressed the problem of management morbidity and mortality with early versus delayed surgical treatment. Preliminary findings suggest that an early operation may improve overall outcome in most patients. In good grade patients, the surgical mortality does not significantly change if an operation is done early. Clearly, more patients die while waiting for a delayed surgical procedure than die as a result of increased risks of an early one. Furthermore, early operation does not increase the incidence or worsen the outcome of symptomatic vasospasm. Only patients with severe clinical vasospasm at the time of presentation appear to benefit from cautious delay of the operation until symptoms have cleared.

It is foreseeable that an increased awareness of this entity in the general population will lead to a much earlier recognition of the disease through its warning symptom—that is, sentinel leak—and early surgical repair can be carried out before the devastating effects of major aneurysmal rupture occur.

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Chronic Benign Pain Management

CHRONIC BENIGN PAIN is estimated to affect as many as 20 million people in the United States, representing an enormous loss of productivity, large medical expenses and considerable suffering for the persons so affected. A multidisciplinary team approach to pain management emphasizes an accurate initial diagnosis and treatment directed at reducing drug dependence and increasing functional capabilities. Techniques used include behavioral modification, physical therapy, transcutaneous electrical stimulation, nerve blocks, hypnosis, biofeedback and acupuncture, among others.

In general, neurosurgical therapy for chronic benign pain should be used only after a thorough trial of treatment by a multidisciplinary pain management team. Two recent neurosurgical procedures for treating chronic benign pain include electrically stimulating deep brain structures and placing lesions in the dorsal root entry zone of the spinal cord. The brain stimulation technique is based on results of studies in animals that showed powerful pain inhibitory pathways descending from the periaqueductal grey region of the brain stem and